FORM ONE CHEMISTRY
END OF TERM 3 YEAR 2023
MARKING SCHEME

1. (a) If hydrogen gas is allowed to accumulate in the room; it can cause explosion. √1
(b) Reduction reaction. √1
(c) - Used in making oxy-hydrogen flame √1
- Used in hydrogenation of oils - Reject hardeny: Any one √1
- Used in manufacture of ammonia.

(i) $PbO_{(s)} + H_{2(g)} \longrightarrow Pb_{(s)} + H_2O_{(l)}$ ✓ 1(in word)
(ii) Reducing property
(iii) No reaction✓ ½, sodium metal is more reactive than hydrogen, hence hydrogen cannot reduce oxide to element sodium.

2. (a) (i) Addiction and dependency √ ½
(ii) Stress / depression √ ½
(iii) Hallucination √ ½

(b) (i) Glass does not rust. √ ½
(ii) Glass is transparent. √ ½
(iii)Glass can withstand heating. √ ½

(c) (i) A – Pale blue zone √ ½
B – Green blue zone √ ½
C – Almost colourless zone √ ½

(ii) The pale blue zone
(iii) - It's the hottest √ ½
- It's a clean flame √ ½

(d) (i) The luminous flame.
(ii) When the air hole is closed.

(e) Non-luminous flame is clear √ ½ such that its difficult to be seen. Thus its adjusted to the luminous flame which is visible due to its brightness √ ½ // saves on fuel

3(a) P and S
(b) Q

4 i conc sodium hydroxide//KOH ✓ 1 mark
ii Cooled to -25^{o}c and turns to ice ✓ 1 mark

iii -200 ^{o}c ✓ 1 mark
iv N_2, Ar, O_2 ✓ 1 mark

5, (i) Between (100 and 108)0C. ✓1
(ii) Impure water ✓ (½ Mark)
It boils over a temperature range √ (½ Mark)
(iii)It raises the boiling point of the water. ✓1

6. (i) $CaCO_{3\,(s)} + H_2SO_{4\,(aq)} \longrightarrow CaSO_{4\,(s)} + H_2O_{(l)} + CO_{2\,(g)}$ ✓ 1 (in words)

7 (a) It reacts with the oxygen ✓ ½ present there and also with nitrogen ✓ ½ gas present there.
(b) $2Mg_{\,(s)} + O_{2\,(g)} \longrightarrow 2MgO_{\,(s)}$ ✓ 1 Mark
$3Mg_{(s)} + N_{2\,(g)} \longrightarrow Mg_3N_{2(s)}$ ✓ 1 Mark

8. (i) - downward delivery of gas method//upward displacement of air
ii NO 1Mark
- The gas is less dense than air (✓ ½ Mark) hence can't be collected by downward delivery.
(iii) Concentrated sulphuric (VI) acid (✓ 1 Mark) *reject if "concentrated" is missing.*
(iv) - It's colourless ✓
- Odourless ✓
- Less dense than air ✓
Any two for (½ mk) each

9. lead (II) nitrate lead (II) oxide + nitrogen (IV) oxide +Oxygen gas
Colourless
Oduorless
Slightly soluble in water
Slightly denser than air

- Oxyacetylene flame for welding ✓ ½ mark
- In hospitals for patients with breathing difficulties ✓ ½ mark
- In respiration ✓ ½ mark
- When mixed helium it is used by deep sea divers and mountain climbers ✓ ½ mark

10.i Pipette
iiVolumetric flask
Measuring cylinder
Syringe
Burette (any three)

11. (a) Red ✓ ½ and blue ✓ ½
(b) By solvent extraction
(c) -Unequal solubilities
- Different absorption abilities

13. i fractional distillation
ii Separating funnel
iii sublimation

(14) ***It acts as an impurity in the ice hence lowering its melting point.*** ✓***1***

(b) Salt accelerates the rate of rusting of the iron parts of the motor vehicles. ✓***1***

15. (a)

Name ***Desiccator*** Name Evaporating dish
Use ***Drying or keeping substances from moisture***
Use ***Evaporating liquids to obtain crystals***

16.

- ✓ All the oxygen was used up

1000-800=200;
(200/1000)x100=20%

It can be separated by physical means
The components are not chemically combined